

FORM 770-1390
(REV 11-98)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/319243

INTERNATIONAL APPLICATION NO.

PCT/EP97/06741

INTERNATIONAL FILING DATE

02 December 1997

PRIORITY DATE CLAIMED

07 December 1996

TITLE OF INVENTION
TRAINING APPARATUS

APPLICANT(S) FOR DO/EO/US

TJOA, Ping, Liong - Grabenstrasse 24c, D-71116 Gartringen, Germany

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
 - Published International Application WO 98/24519
 - English translation of published International Application WO 98/24519
 - International Preliminary Examination Report
 - English translation of International Preliminary Examination Report

Refunded	
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REGISTRATION NUMBER

Applicant or Patentee: Ping Liang TJOAApplication or Patent No. : 09/319,243Filed or Issued: June 7, 1999For: TRAINING APPARATUS

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37 CFR 1.9(f) and 1.27(b)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled TRAINING APPARATUS

described in

_____ the specification filed herewith.

X application no. 09/319,243, filed Jun 7, 1999

_____ patent no. _____, issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

X no such person, concern, or organization

_____ persons, concerns or organization listed below*

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

NAME _____

ADDRESS _____

_____ INDIVIDUAL _____ SMALL BUSINESS CONCERN _____ NONPROFIT ORGANIZATION

09/319,243 "E426T.E60"

NAME _____
ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

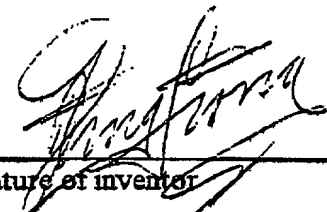
NAME _____
ADDRESS _____

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small business entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Ping Liong TJOA
Name of inventor

X 
Signature of inventor

Date X 1. Aug. 1999

09/319243

514 Rec'd PCT/PTO 07 JUN 1999

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
Ping Liong TJOA)
Appln. No. : TBA)
Filed : June 7, 1999)
For : TRAINING APPARATUS)

PRELIMINARY AMENDMENT

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

Prior to an examination on the merits, please amend this application as follows:

AMENDMENTS

IN THE SPECIFICATION:

Page 1, line 2, change "Specification" to

--Field of the Invention--;

line 3, change "as" to --having a rod-like intermediate element and identical
end elements, curved outward at both ends of the rod-like intermediate element--;

between lines 4 and 5, insert

--Background of the Invention--;

between lines 12 and 13, insert

--Summary of the Invention--;

line 13, change "The" to --An--, and change "create" to --provide--;

line 14, change "known at the outset" to --noted above--;

lines 22 and 23, delete in their entirety, and insert --noted above, the end element has a spherical form, which on its side toward the rod-like intermediate element makes a steady transition via a turning region into a conversely oriented, concave region, which makes a steady transition into the configuration of the rod-like intermediate element.--; and

line 24, between "the" and "invention" insert --present--.

Page 2, line 6, before "invention" insert --present--;

lines 9 and 10, delete in their entirety;

line 21, change "from the characteristics of one or more of claims 6 - 9." to --by the present invention.--;

line 27, delete ", as defined by claim 9,";

line 30, delete "a";

line 31, between "the" and "invention" insert --present--; and

line 32, between "the" and "invention" insert --present--.

Page 3, line 1, delete "Shown are:";

between lines 1 and 2, insert

--Brief Description of the Drawing--;

line 2, between the "," and "a" insert --is--;

line 5, between the "," and "a" insert --is--;

line 7, between the "," and "a" insert --is--; and

between lines 7 and 8, insert

--Description of the Preferred Embodiment--.

Page 5, line 21, change "At the office for relaxation" to --At the office for relaxation--; and

line 28, change In sports and fitness training" to --In sports and fitness training--.

Page 6, line 11, change "In patient gymnastics and rehabilitation" to --In patient gymnastics and rehabilitation--;

line 22, change "In Oigong and Taiququan" to --In Oigong and Taiququan--; and

line 30, delete "a" (both occurrences).

IN THE CLAIMS:

Please cancel claims 1-11 without prejudice or disclaimer of the subject matter thereof.

Please add the following new claims:

12. A training apparatus, comprising:

a rod-like intermediate element; and

identical end elements, each situated at a respective end of said intermediate element,

wherein each end element has a spherical form with a non-discontinuous spherical surface remote from said rod-like intermediate element, a turning region and a conversely concave region on its side toward said rod-like intermediate element, said turning region making a steady transition into said conversely concave region, and wherein said conversely concave region making a steady transition to said rod-like intermediate element.

13. The training apparatus according to claim 12, wherein the total length of the training apparatus is approximately in the range of the length of the shoulder span of the person using it.

14. The training apparatus according to claim 12, wherein the radius of said conversely concave region is approximately equal to the radius of said non-discontinuous spherical surface.

15. The training apparatus according to claim 12, wherein said conversely concave region and said turning region form a smaller minimum diameter than the equivalent of the maximum diameter of said rod-like intermediate element.

16. The training apparatus according to claim 15, wherein said rod-like intermediate element is cylindrical over a substantial portion of its length.

17. The training apparatus according to claim 12, wherein the radius of said spherical surface is in a range of between 30mm and 75mm.

18. The training apparatus according to claim 12, wherein the minimum diameter of said conversely concave region and said turning region is in a range of between 17mm and 25mm.

19. The training apparatus according to claim 12, wherein the total length of the training apparatus is in a range of between 200mm and 560mm.

20. The training apparatus according to claim 12, wherein the total length of the training apparatus is in the range of between 600mm to 2000mm.

21. The training apparatus according to claim 12, wherein the total length of the training apparatus is in the range of between 600mm and 1200mm.

22. The training apparatus according to claim 12, wherein the training apparatus is molded in one piece.

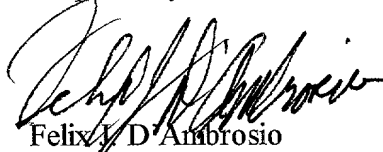
23. The training apparatus according to claim 12, wherein the training apparatus is made of one of: wood, plastic, metal and stone.

REMARKS

The above amendments to the specification and claims are presented to place this application in better condition for examination.

Submitted herewith is page 10 of the application containing an abstract of the disclosure.

Respectfully submitted,


Felix J. D'Amrosio
Reg. No. 25,721

June 7, 1999

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1/prt

09/319243
514 Rec'd PCT/PTO 07 JUN 1999

WO 98/24519

PCT/EP 97/06741

TRAINING APPARATUS

Specification

The present invention relates to a training apparatus as generically defined by the preamble to claim 1.

5 For gentle massage of the meridians known from traditional Chinese medicine via the palms of the hand, the so-called Qigong balls are known, pairs of which are rotated in the hand and exert a positive effect on the energy balance of the person using them. In this respect, it is also known to use a training apparatus of the type defined at the outset, in which mushroom-shaped end pieces are provided on a relatively short rod-like intermediate element.

10 The object of the present invention is to create a training apparatus of the type known at the outset whose geometric embodiment serves not only to activate the meridians via the palms of the hands, but also in combination with this, by means of a more-optimal posture and flexibility, especially in the shoulder and chest region, leads to an improvement in respiratory capacity of the person using it and with which more universal applicability is attainable.

15 To attain this object, in a training apparatus of the type defined at the outset, the characteristics recited in claim 1 are provided.

20 The training apparatus of the invention thus has two spheres of a certain diameter, which are solidly connectable or connected to one another by a rod of a defined length; these spheres can be held in the hand. For the user, because of the steady transition between the balls and the rod, it is possible to allow the rod during use to rotate in all possible directions and also for the neck or transition region between the spheres

and the rod to slide between the fingers. As a result, on the one hand the meridians are activated via the palms of the hands, and on the other the rod, when used accordingly, promotes optimal posture and motion in the shoulder and chest region and thus assures optimal respiration. The training apparatus of the invention can be used in conjunction with other exercises, that is, especially whenever a person is performing body, energy, or breathing exercises, or Qigong exercises.

Advantageous features of the training apparatus are obtained from the characteristics of one or more of claims 2 - 5.

The diameter of the spheres depends on usage in various fields. The optimal total length of the training apparatus varies as a function of the individual shoulder span width of the user; the length of the user's forearm may also play a role. The steady concave transition region or neck region is essential; it leads to universal applicability of the training apparatus, even in the area of other body exercises or calisthenics.

Advantageous features with regard to the geometric dimensions for children and adults of different body configuration and for athletes in different disciplines are obtained from the characteristics of one or more of claims 6 - 9.

The training apparatus can be in multiple parts, for instance two spheres and one rod; the transition region is associated with either the spheres and/or the intermediate region so that the user can assemble his training apparatus with the optimal dimensions for a desired use. However, it is expedient if, as defined by claim 9, the individual parts form a one-piece training apparatus.

The training apparatus can be made from many types of materials, such as wood, metal, stone, or a plastic.

Further details of the invention can be learned from the following description, in which the invention is described and explained in further detail in terms of the exemplary embodiment

shown in the drawing. Shown are:

Fig. 1, a front view of a rod-like training apparatus in accordance with a preferred exemplary embodiment of the present invention;

5 Fig. 2, a side view of the training apparatus of Fig. 1; and

Fig. 3, a plan view of the training apparatus of Fig. 1.

10 The training apparatus 10 shown in a preferred exemplary embodiment in the drawing is formed of a rod-like intermediate element 11 and two spherical end pieces 12 and 13. The training apparatus 10, in this case in one piece, is rotationally symmetrical about its longitudinal axis 14.

15 The rod-like intermediate element 11, which is symmetrical with respect to a longitudinal center plane 19, is embodied cylindrically over a substantial portion of its length, and in particular in its longitudinal middle region 16. This cylindrical region 16 is adjoined on both sides by a respective conical region 17, 18, which changes over steadily in a neck region or transition region 21, 22 to the applicable spherical end piece 12, 13.

20 The neck region 21 or 22 is formed by having the spherical form of the end piece 12 or 13 change over steadily into a conversely oriented concave region 23 or 24, which in turn runs approximately at a tangent into the conical region 17 or 18 of the intermediate element 11. The term "steady transition" is intended to imply that the spherical form of the end piece 12 and 13 changes over into the concave region 23 and 24, respectively, via a turning region 25, or in other words without any discontinuity. The neck region 21 and 22 is configured in such a way that its minimum diameter is less than the diameter of the cylindrical middle region 16.

5 The dimensions of the training apparatus 10, that is the diameter of the spherical end pieces 12, 13, the diameter of the thinnest point of the neck region 21, 22, the diameter of the cylindrical middle region 16, and the total length of the rod-like training apparatus 10, including the radius of the concave region 23, 24, depend on whether the training apparatus 10 is intended to be suitable for adults or children, in each case taking into account the average body size and shape. For the total length of the training apparatus 10, body characteristics of the person using it play a role, examples being the shoulder span length and the forearm length, while for the smallest diameter of the neck region and the diameter of the spherical end piece, the hand size of the person using it is determinative.

10 The preferred ranges of dimension are, for the total length of the training apparatus 10, approximately 200 mm to 560 mm; for the diameter of the spherical end piece 12, 13 approximately 30 mm to 75 mm, and for the diameter of the thinnest point in the neck region 21, 22, approximately 17 mm to 25 mm. Within a certain order of magnitude, a relationship of these individual relationships with one another exists. For instance, for the standard shape, the diameter of the spherical end pieces 12, 13 is 47 mm, the diameter of the thinnest point in the neck region 21, 22 is 21 mm, the diameter of the cylindrical region 16 is 36 mm, and the total length of the training apparatus 10 is 400 mm.

25 By way of example, the training apparatus is held on the outside between the palms and rotated. The spherical end pieces 12, 13 may, however, also be held from inside by the palms, since the neck region 21, 22 can slide between adjacent fingers comfortably in each case, and the palms can grip the "inner" spherical shape of the end pieces 12, 13. This can be done either alone or in combination with other body exercises. Because of the spherical shape and the rotational symmetry of the

rod, the meridians known from traditional Chinese medicine are on the one hand activated via the palms, and on the other given technically correct use, optimal posture and flexibility in the shoulder and chest region are promoted, thus assuring optimal respiration. The training apparatus can be employed not only with Asiatic motion systems but also, because of its geometry, in the most various areas. Different physical exercise systems can be mixed and combined with one another readily. Combined applications, such as in jogging, have the effect that the muscles can be enriched with more oxygen because the breathing is made easier, and so not only is the actual goal of the jogging, which is conditioning training, achieved, but also the applicable physical activity is brought into harmony with the energy balance. In certain fitness exercises such as aerobics, the use of the training apparatus also lessens the danger of injury from over-rotation or over- extension, above all in the shoulder or neck region, because the motion of the upper torso is automatically coordinated by the way the training apparatus is held.

Further possible applications are as follows:

At the office for relaxation: If in a break after someone has sat for a long time at his desk, the training rod is held between the palms and rotated while body exercises are being done, then by means of this simple exercise not only is breathing freed up, but the upper spine and the muscles in the chest region, which as a rule are bowed from long periods of sitting at a desk, straighten up again.

In sports and fitness training: In knee bends, the training rod can be held between the palms with the arms outstretched. In this way the training rod prevents the shoulders from being hunched and constricting breathing. In jogging, it is possible to hold the two end spheres of the training rod each in one hand and while running to make the rod

describe a circle in the rhythm of the running. Once again, by coordinating the arm motion, deeper and more relaxed breathing is attained, thus reducing the burden on the body during jogging.

Other training exercises with the aid of the training rod can be performed by athletes in certain disciplines, such as rowing, sprinting, swimming and in particular using the crawl, self defense, and so forth. Here, however, the training rod has greater length dimensions in the range from approximately 600 mm up to 1000 mm or 2000 mm, while the dimensions of the end elements remain the same.

In patient gymnastics and rehabilitation: Bedridden patients, by simply turning the training rod between their palms, can favorably affect their breathing function and thus many other processes in metabolism. Even in simple body exercises for training muscles, or in coordination exercises, it may be appropriate to use the training rod. For instance, in stretching exercises for mobilizing the spinal muscles, which are usually to be done sitting on a chair by simply rotating the torso, simply holding the rod not only coordinates the motion but also, because of this coordination, prevents over-extension and thus keeps the airway clear.

In Qigong and Taigiquan: In the field of Qigong, a great number of new exercises can be developed or old exercises can be modified in such a way that they can be simplified with the training rod, so that it is certain that they can also be done correctly. For some meditation postures, the use of the rod is also appropriate.

The training apparatus or training rod can preferably be of wood, for instance. However, it is also possible for the training apparatus to be made from a plastic or a metal, preferably a lightweight metal, or a stone material.

Even if in the exemplary embodiment the training apparatus has been shown and described as being in one piece, it is

understood that it can also be provided in three pieces, so that the three parts, namely the rod-like intermediate element and the two spherical end pieces, can be adapted to given requirements and put together or mounted in a manner not shown in detail.

Claims

5 1. A training apparatus (10), having a rod-like intermediate element (11), and having identical end elements, (12, 13) curved outward, disposed on both ends of the rod-like intermediate element (11), characterized in that the end element (12, 13) has a spherical form, which on its side toward the rod-like intermediate element (11) makes a steady transition via a turning region (25) into a conversely oriented, concave region (23, 24), which makes a steady transition into the configuration of the rod-like intermediate element (11).

2. The training apparatus of claim 1, characterized in that it has a total length that is approximately in the range of the length of the shoulder span of the person using it.

3. The training apparatus of claim 1, characterized in that the radius of the concave region (23, 24) is approximately equal to the spherical radius of the end element (12, 13).

5 4. The training apparatus of at least one of claims 1 - 3, characterized in that the steady concave transition region (21, 22) between the spherical end elements (12, 13) and the rod-like intermediate element (11) has a smaller minimum diameter than the equivalent of the maximum diameter of the rod-like intermediate element (11).

5. The training apparatus of claim 4, characterized in that the rod-like intermediate element (11) is cylindrical over a substantial region of its length.

6. The training apparatus of at least one of the foregoing claims, characterized in that the radius of the spherical shape is in a range between 30 mm and 75 mm.

7. The training apparatus of at least one of the foregoing claims, characterized in that the minimum diameter of the steady concave transition region (21, 22) is in a range between 17 mm and 25 mm.

8. The training apparatus of at least one of the foregoing claims, characterized in that its total length is in a range between 200 mm and 560 mm.

9. The training apparatus of at least one of claims 1 - 7, characterized in that a total length is in a range between 600 mm and 2000 mm, and preferably between 600 mm and 1200 mm.

10. The training apparatus of at least one of the foregoing claims, characterized in that it is molded in one piece.

11. The training apparatus of at least one of the foregoing claims, characterized in that it is of wood, plastic, metal or stone.

Abstract of Disclosure

A training apparatus with a bar-shaped intermediate element and identical externally rounded end pieces located on both ends of the bar-shaped element, wherein the end piece is shaped like a sphere which runs continuously into an inverse concave vaulted area on its side facing the bar-shaped intermediate element via a bending area and from thereon into the bar-like intermediate element.

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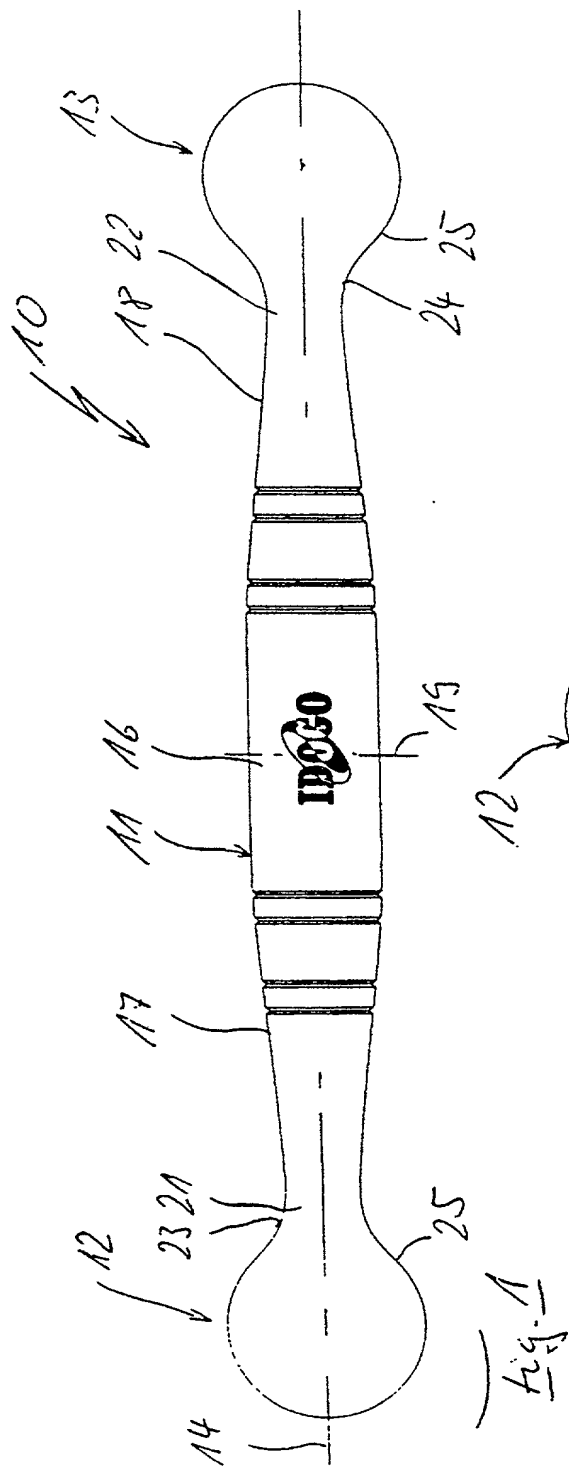
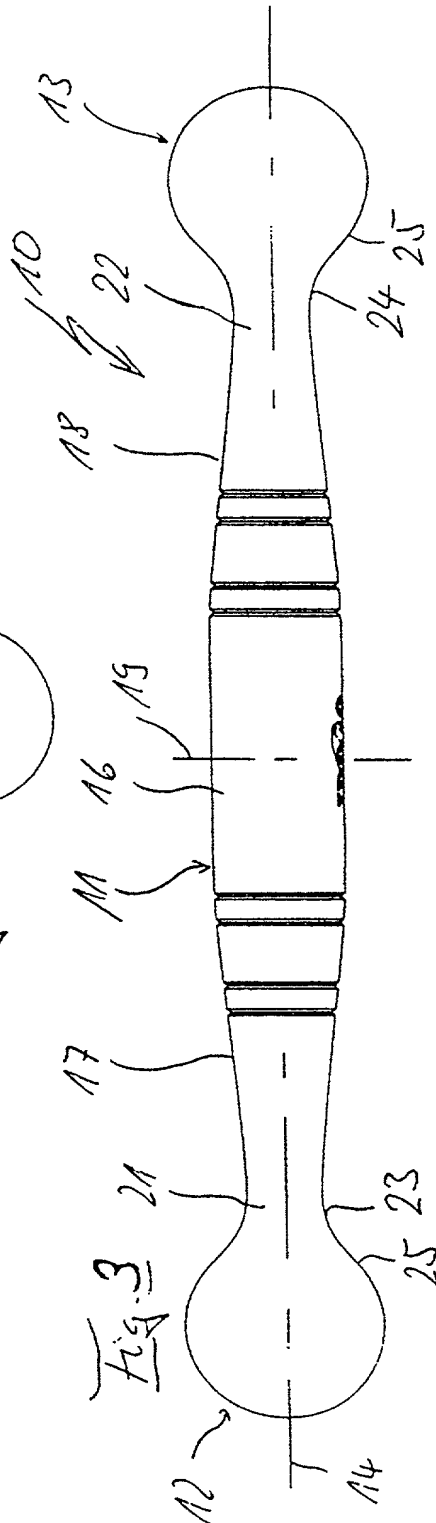
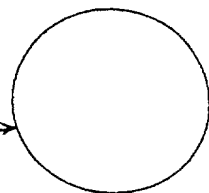


Fig. 2



320-114

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

This declaration is of the following type:

- ☐ original
- ☐ design
- ☐ supplemental
- ☒ national stage of PCT
- ☐ divisional
- ☐ continuation
- ☐ continuation-in-part (CIP)

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed for and for which a patent is sought on the invention entitled:

TRAINING APPARATUS

the specification of which

☐ is attached hereto

☒ was filed on 07 June 1999, as

Application No. 09/319,243

and was amended on _____

(if applicable)

☒ was described and claimed in PCT International application

No. PCT/EP97/06741 filed on 02 December 1997

and as amended under PCT Article 19 on _____

(if any).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any Amendment referred to above.

I acknowledge duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Sec. 1.56.

☐ In compliance with this duty there is attached an information disclosure statement. 37 CFR 1.97.

09319243 080599

I hereby claim foreign priority benefits under Title 35, United States Code, Sec. 119, of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

☐ no such applications have been filed
☒ such applications have been filed as follows.

Prior Foreign Application(s)

<u>296 21 320.9</u>	<u>Germany</u>	<u>07/Dec./1996</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(D/M/Y filed)	Yes	No
<u> </u>	<u> </u>	<u> </u>	<input type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(D/M/Y filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

<u> </u>	<u> </u>	<u> </u>
(Appln. Serial No.)	(Filing Date)	(patented, pending, abandoned)
<u> </u>	<u> </u>	<u> </u>
(Appln. Serial No.)	(Filing Date)	(patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code, Sec. 120 of any United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Sec. 112, I acknowledge the duty to disclose all information known to be material to patentability as defined in Title 37, Code of Federal Regulations, Sec. 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

George M. Cooper, Reg. No. 20,201
 Felix J. D'Ambrosio, Reg. No. 25,721
 James W. Hellwege, Reg. No. 28,808
 Eric S. Spector, Reg. No. 22,495

Douglas R. Hanscom, Reg. No. 26,600
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03.08.99 11:59 AN-00017034151508

I hereby declare all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Ping Liong TJOA

Inventor's signature X [Signature]

Date 1. Aug. 1999

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Citizenship Indonesian

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